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Forest Insect Conditions on the Uinta National Forest 1968

The following is a summary of forest insect problems on the Uinta National Forest during 1968. Material for this report was compiled from on-the-ground visits to the Forest, laboratory rearings, and aerial survey data.

The principal insect problems on the Forest are a looper on Gambel oak along the Wasatch Front and the Engelmann spruce beetle in high elevation spruce stands. Briefly, the looper caused extensive defoliation of Gambel oak and range plants over widely scattered areas with complete defoliation occurring in the intensively used archery range. Since this is our first experience with this insect, its future status is unknown at this time. Engelmann spruce beetle activity increased slightly in 1968 over that in recent years, but timely surveillance and effective logging should keep damage within tolerable limits. A more detailed discussion of these problems follows:

A looper, Lambdina punctata (Hulst)

Specimens of this looper were sent to taxonomists at the National Museum where they identified it as Lambdina punctata (Hulst)(Lepidoptera: Geometridae). At the present time there is almost no information available on the biology of this particular species.

This is the first year the infestations were reported to Regional Office personnel although Forest personnel mentioned there was very light feeding last year in some of the areas. The 1968 aerial survey indicates there are approximately 2,500 acres of defoliation scattered along the Wasatch Front from Provo to American Fork. Twelve hundred acres of light to heavy defoliation were recorded in Pole Canyon, 1,000 acres of medium to heavy feeding in Battle Creek, and 300 acres of medium defoliation in Heisetts Hollow (note the insect aerial survey map that was sent earlier).

Larval populations were exceptionally heavy in the area around the Timpanogos Archery Range. The foliage on Gambel oak (preferred host) was completely stripped and the larvae resorted to feeding on maple and a variety of range plants. Periodic visits were made to this area during the summer and fall to collect additional information on the biology and habits of this looper. Although egg hatch has yet to be observed, it probably occurs with the onset of warm weather in May or early June. The larvae generally feed through June and July and sometimes into August when there is a shortage of food. The peak of feeding activity is reached, however, around the middle of July when the larvae fall to the ground, pupate, and enter their dormant stage. The pupae were found buried about two inches in the duff around the base of the trees where they remained for an average of three weeks. Moth flight was first observed early in August.

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Although several attempts were made to determine the major oviposition (egg laying) site, no consistent pattern could be detected. It is still unknown where the majority of the eggs are found; however, small concentrations were found in the duff around the oak root collars, along the stalks of the Mullein plants, and occasionally in the bark crevices of oak. The insect was still in the egg stage at the time of the last field observation on October 11. No winter examinations were made after that date, but it is very likely they overwinter in that stage. With many other species of insects, we can estimate the following year's population level by sampling eggs in the fall; but due to the dispersed pattern of egg deposition, it was not possible in this case. We did, however, encounter a sufficient number of eggs to indicate that at least some observable feeding will occur in 1969.

Larval and egg parasitism averaged 12 and 21 percent, respectively. No predation or presence of disease was observed in the population this year. From our past experience with loopers, however, these natural control factors have a tendency to build up rather rapidly. Whether or not these biological entities will exert any influence next year is unknown. The actual extent or degree of defoliation to expect would be pure speculation.

Gambel oak is particularly hardy and possesses an exceptional ability to withstand severe defoliation. This is evidenced by the almost complete refoliation this past year following nearly total defoliation earlier in the summer. It would require repeated total defoliation of the oak to result in significant tree mortality. The feeding from last summer and next year will probably only result in scattered branch and plant mortality and a temporary reduction in plant vigor.

As we mentioned in our 5220 memorandum dated July 25, 1968, looper infestations have a history of only surviving three to four years because natural factors usually intervene to control this insect. We do not recommend chemical control. We will, however, check the insect's progress following egg hatch this spring and notify you of any significant activity, one way or another.

Engelmann spruce beetle, Dendroctonus obesus Mann.

The Engelmann spruce beetle, at one time a serious pest on the Heber Ranger District, has been on the decline for several years, partly due to natural factors, but mostly because of timely and effective logging practices. This year, however, a slight resurgence in beetle activity was observed, which seems to be part of a regional trend. Most of this activity was picked up during the aerial survey while other damage, not visible from the air, was detected and reported by observant Forest personnel. Because of pressing work elsewhere, entomologists were unable to inspect any of the infestations firsthand.

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Widely scattered spruce beetle damage was observed on the Strawberry District in the upper reaches of the Left Fork of Currant Creek, in Smith Basin, and in Tut Creek. On a recommendation of Ranger Glass, a close look was taken in the upper part of Racetrack Creek, but no beetle damage was observed. It should be mentioned here that aerial detection of the spruce beetle is, under most circumstances, very difficult. The infested trees do not exhibit vivid foliage discoloration as beetle-attacked pine; instead, the spruce simply looses its foliage with little or no color change. Occasionally, however, spruce foliage will yellow slightly prior to needle drop, and this sign along with an orange hue reflected by the newly defoliated trees (snags), is what is seen from the air. The only sure way to detect and evaluate the status of the spruce beetle is to examine it firsthand on the ground.

Additional beetle activity was spotted throughout portions of the Heber District. Isolated patches of infested and dead spruce were observed in the uppermost tributaries of the West Fork of the Duchesne River, in the upper reaches of Mill Hollow Creek, and to a lesser extent in the upper Soapstone drainage. Ranger Evans is aware of these small infestation centers and has done much to minimize the chronic infestation in the upper Soapstone.

One potential problem may arise in the clearcut area east of Wolf Creek Guard Station. Some of the area still contained downed spruce timber that presumably would not be removed until the summer of 1969. It is probable that this material will become infested this spring. Although the beetle has a 2-year life span in this area, it would be prudent if the logs were removed in 1969, but no later than 1970. After that, the emerging populations will be a threat to standing timber.

No practical method of control can be recommended for the other widely scattered infestations. Most are small, are of unknown biological potential, and are located in steep, inaccessible areas. Every effort should be made, however, to incorporate these and other high hazard spruce stands into present and future logging plans, wherever and whenever possible.

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